

# U.S. Coast Guard Navigation Center



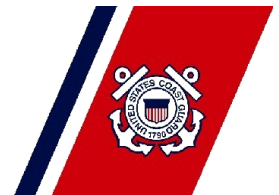
## GPS Interference Test Approval Process

International Committee on GNSS  
2-7 December 2017



Homeland  
Security

*U.S. Department of  
Homeland Security*  
**United States  
Coast Guard**



# Why Test?

- Conduct GPS tests, training activities, and exercises to support both civil and military interests.
- Goal is balance between civil transportation availability and national security interests.
- Coordination among various government agencies and industry is critical to avoid placing civil GPS users (mariners, aviators) in a hazardous environment (safety of life / safety of flight) created by the testing.
- The final approving authority for GPS Testing rests solely with Department of Defense.

# GPS Test Approval Process

- The GPS Interference Test Approval process developed to facilitate test approval across the U.S. Federal Government.
- DOD U.S. Strategic Command coordinates approval of testing with Department of Homeland Security (DHS) and the Department of Transportation (DOT) to reduce impacts on civil GPS users.
- Particularly important to the Coast Guard is potential impact on “safety of life” in harbor entrance and approach phase of maritime navigation.
- Federal Aviation Administration (FAA) coordinates GPS-band testing approval for DOT aviation.

# GPS Test Approval Process (Cont.)

- Should NAVCEN determine the potential exists for testing to impact U.S. navigable waters, they will request a review by the applicable Coast Guard District of maritime safety impacts based upon:
  - knowledge of local conditions / local events
  - types of maritime traffic
  - planned events or operations,
  - hazardous cargoes being transported
  - local pilot dependency upon GPS/DGPS
  - other impacts of the tests.

# Conflict Resolution Considerations

- What is the safety issue involved?
- Is there an alternative, non-GPS method to perform the activity?
- What are the implications to National Security if the test, training or exercise is terminated or postponed?
- For both parties, what is the purpose of the activity?
- For both parties, how many individuals or systems are affected?
- For both parties, what are the economic implications?
- Is it possible for either party to reschedule to another date or set of dates?
- Is it possible for either party to only use a portion of the dates they require?
- Is it possible for either party to use different or fewer times of day?

If CG District determines impact is unacceptable, NAVCEN will coordinate with testing organization to come to consensus on acceptable times for testing.

# Stop the Test

- There are procedures whereby authorized officials can quickly halt specific tests because testing is creating problems that were not anticipated or expected during the test planning phase.
- For each test, information regarding stop procedures are outlined in the test approval plan.
- U.S. Coast Guard Districts will notify NAVCEN for any established reason to stop the testing.
- NAVCEN is responsible for having at the ready all test organization information on the days of testing.

# Why Stop the Test?

- NAVCEN is authorized to call the test organizer with a request to stop the testing if:
  - There is reason to believe the testing is adversely impacting search and rescue efforts, etc.; or
  - There are events/traffic that will be adversely impacted by the loss of GPS/DGPS in the maritime area, e.g., Liquefied Natural Gas (LNG) Carrier in final approach to designated harbor; or
  - There is reason to believe testing is affecting areas not expected to be affected.

# Public Notification

- If impact is acceptable, NAVCEN will provide recommended text for Local Notice to Mariners and Broadcast Notice to Mariners in impacted area before and during test.
- NAVCEN and FAA are on distribution for test notifications once testing events are approved.
- FAA provides aviation community notifications of scheduled testing in form of Notice to Airmen (NOTAM).
- NAVCEN publishes notification of testing dates and locations on [www.navcen.uscg.gov](http://www.navcen.uscg.gov). and Coast Guard Districts provide LNM and BNM for the areas which may be impacted by tests.





### Mission Areas

- Global Positioning System
- Nationwide DGPS
- Nationwide AIS (NAIS)
- AIS (Overview, Messages, etc.)
- Long Range Identification and Tracking
- Local Notices to Mariners
- Light Lists Publications (2017)
- Light Lists (Weekly Updates)
- CGSIC Information
- LORAN C (archive)

### Subscribe / Report (free)

- Email Message Subscriptions (Free)
- Report an ATON Discrepancy
- Report a GPS Problem
- Report an NDGPS Problem
- Report an LRIT Problem
- Report an AIS / NAIS Problem
- Contact Us

### Maritime Information

- Electronic Charts Approval
- Maritime Safety Information Downloads
- Maritime Telecommunications
- CG Nat'l Distress System
- Global Maritime Distress and Safety System
- Marine Safety Information Broadcasts
- MF & HF Channels
- Nav Pubs and Documents
- Radio Watch Requirements
- Vessel Traffic Services
- VHF Channels & Freqs
- USCG "Homeport" Website

### U.S. COAST GUARD NAVIGATION CENTER

October 30, 2017

#### NAVIGATION CENTER POINTS OF INTEREST



##### Current Operational / Safety Information

- Consolidated Nav Info
- DGPS Site Status
- GPS Ops Advisories & NANUS
- GPS Almanacs
- GPS CNAV Testing
- Public Notices for Bridges
- Current Ice Chart
- Local Notices to Mariners
- Light Lists / Updates / Corrections
- Navigation Rules
- Navigation Regulations



##### Maritime Information

- Automatic Identification System (AIS)
- Global Maritime Distress and Safety System (GMDSS)
- CG Nat'l Distress System
- Digital Selective Calling
- Vessel Traffic Services
- USCG "Homeport" Website
- Maritime Telecommunications
- Radionavigation Pubs
- Radio Watch Requirements
- Ports and Waterways Safety Assessment (PAWSA)
- Port Access Route Studies (PARS)



##### About NAVCEN

- Vision & Mission Statement
- Contact Us
- Directions to NAVCEN
- Search Our Site
- Site Map
- Website Privacy Policy

### News and Notices

- RSS Feeds (LNMs, LL Correc...)
- The 2017 Federal Radionavigation... has been signed and released. It is available for download in portable document format (PDF, 3MB)
- The U.S. Department of Transportation and the Coast Guard Navigation Center will host the 57th meeting of the Global Positioning System Service Interface Committee, Sept. 25-26 at the Oregon Convention Center in Portland, OR. CGSIC meetings are open to the public. See the agenda on GPS.gov.
- Invitation to annual Public Interface Control Working Group and public meeting to address changes to GPS public interface documents. NOTICE: The Program Office is considering modification or removal of Operational Advisories in RFC-351 for both current and future ground control systems. If you are a stakeholder with this or any other listed, your attendance/participation is strongly recommended.
- A new U.S. Coast Guard Safety Alert has been published regarding that many vessel operators and masters continue to rely on outdated high seas communications frequencies when communicating with the Coast Guard. Please read the entire Safety Alert.
- On June 22, 2017, a GPS disruption was reported in the Black Sea area. An alert was distributed through the Maritime Security Communications Industry Web Portal. The Navigation Center encourages mariners to familiarize themselves with the required procedures to report a disruption and the actions they should take to mitigate the affect of a disruption.
- The Navigation Center has a new tool to enable commercial vessel owners/operators to verify the accuracy of their Automatic Identification System (AIS) broadcast information. We encourage you to visit the Vessel Information Verification Service.



America's Waterway Watch



Provide Your Feedback Today!

## APPROVED GPS TESTING (UPDATED Oct 27, 2017)

TEST PERIOD APPROVED BY DEPARTMENT OF DEFENSE, EXACT DATES AND TIMES OF TESTING, DURING APPROVED PERIOD, WILL BE DETERMINED BY TEST RANGE EVENT PLANNERS.

| Area  | Range  | Date(s)                     | BNM |
|---|--------|-----------------------------|-----|
| White Sands Missile Range, NM<br>WSMR 17-14 | 172 NM | 10-31 OCT 17                | No  |
| Bangor Trident Base, WA<br>FFC 17-09        | 96 NM  | 16-31 OCT, 1-18 NOV 17      | Yes |
| Fort Irwin, CA<br>NTC 17-43                 | 102 NM | 17, 22-30 OCT 17            | No  |
| Kings Bay Base, GA<br>FFC 17-08             | 33 NM  | 23-31 OCT, 1-18 NOV 17      | Yes |
| Edwards AFB, CA<br>EDW 17-02                | 96 NM  | 24-25 , 27, 31 OCT 17       | No  |
| Offshore Charleston, SC<br>CSG4 17-04       | 127 NM | 29 OCT, 5, 9 NOV 17         | Yes |
| Huachuca City, AZ<br>EPG 17-04              | 57 NM  | 30-31 OCT, 1-3, 6-10 NOV 17 | No  |
| White Sands Missile Range, NM               |        |                             |     |

# Sample Broadcast Notice to Mariners

SUBJ: SCHEDULED BROADCAST NOTICE TO MARINERS//A//

**START AT TIME**//210001Z OCT 17//

GPS BNM 029-17 OAHU, HI

1. THE **GPS NAVIGATION SIGNAL MAY BE UNRELIABLE DUE TO TESTING** ON GPS FREQUENCIES USED BY SHIPBOARD NAVIGATION AND HANDHELD SYSTEMS. SYSTEMS THAT RELY ON GPS, SUCH AS E-911, AIS AND DSC, MAY BE AFFECTED AT AN APPROXIMATE TESTING **CENTER POINT** OF 21.624N 157.988W, WITH A POSSIBLE **IMPACT RADIUS** OF 91NM FROM CENTER POINT.
2. GPS TESTING IS SCHEDULED TO BE **CONDUCTED ON**: 23-26 OCT 2017.
3. MORE INFORMATION IS AVAILABLE AT THE COAST GUARD NAVIGATION CENTER WEB SITE [WWW.NAVCEN.USCG.GOV](http://WWW.NAVCEN.USCG.GOV). DURING THIS PERIOD GPS USERS ARE ENCOURAGED TO **REPORT ANY GPS SERVICE OUTAGES** THAT THEY MAY EXPERIENCE TO THE NAVIGATION INFORMATION SERVICE (NIS) BY CALLING (703) 313-5900 OR BY USING THE NAVCEN WEB SITE TO SUBMIT A GPS PROBLEM REPORT.
4. **CANCEL AT TIME**//270001Z OCT 17//

# U.S. Coast Guard Navigation Information Service

<https://www.navcen.uscg.gov>

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